

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

What is claimed is:

1. (currently amended) A method for determining a displacement state of a clutch actuator for a vehicle, the clutch actuator being driven by an electric motor, wherein the armature resistance ( $R_A$ ) of the electric motor is determined in a stationary state of the electric motor, at the determined armature resistance ( $R_A$ ) and applied motor voltage ( $U$ ) as well as measured motor current ( $I$ ), a current ( $I_{Ind}$ ) induced in the electric motor and/or an induced voltage ( $U_{Ind}$ ) are calculated, and from at least one of the induced current ( $I_{Ind}$ ) and/or and induced voltage ( $U_{Ind}$ ), which are proportional to the motor speed ( $n$ ), the displacement state of the clutch actuator is determined.

2. (original) The method as described in Claim 1, wherein the armature resistance ( $R_A$ ) is determined by the following equation:

$$I = \frac{U}{R_A}$$

wherein

$I$  = measured motor current;

$U$  = applied motor voltage;

$R_A$  = armature resistance.

3. (original) The method as described in Claim 1, wherein the motor speed ( $n$ ), which is a function of the induced current ( $I_{Ind}$ ) is determined by following equation:

$$n \propto I_{Ind} = \frac{U_{Ind}}{R_A} = \frac{U}{R_A} - I$$

wherein

$n$  = motor speed;

$I_{Ind}$  = induced current;

$U_{Ind}$  = induced voltage;

$R_A$  = armature resistance;

$I$  = motor current on the electric motor;

$U$  = motor voltage on the electric motor.

4. (original) The method as described in Claim 3, wherein the induced voltage ( $U_{Ind}$ ) is calculated as a function of the motor speed ( $n$ ) by the following equation:

$$U_{Ind} = k_e \cdot n$$

wherein

$n$  = motor speed;

$U_{Ind}$  = induced voltage;

$k_e$  = proportionality factor.

5. (original) The method as described in Claim 4, wherein for a clutch actuator having incremental travel measurement, a recalibration is carried out by determining the armature resistance ( $R_A$ ) at pre-determined time intervals.

6. (currently amended) The method as described in Claim 5, wherein when there is a failure of ~~the~~ an incremental position encoder encoding incremental position, the induced current ( $I_{Ind}$ ) is used to carry out an emergency operation strategy.

7. (currently amended) The method as described in Claim 1, wherein a change of the motor speed  $n$  of the electric motor is detected with respect to the motor current ( $I$ ) in order to determine the position of the clutch actuator at at least one of an abutment and/or and a detent.

8. (original) The method as described in Claim 1, wherein the motor temperature is determined at a known armature resistance ( $R_A$ ).

Attorney Docket No.LUKP105US  
U.S. Patent Application No. 10/762,929  
Reply to Office Action of: May 23, 2005  
Date: August 22, 2005

9. (original) The method as described in Claim 1, wherein the motor voltage (U) is selected at a determined armature resistance ( $R_A$ ) in such a manner that a specific motor current (I) and a specific torque is produced at the motor.